REMARKS

After entry of the subject amendment, claims 1-30 remain pending in the subject application, with claims 1 and 30 in independent form. Claims 1-7 and 30 have been amended as described below. There is full support in the specification as originally filed for the amendments. Accordingly, no new matter has been introduced.

Claims 1-30 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

For purposes of clarification, the term "time interval" has been changed to "interval of time" throughout the application. An "interval of time" is the time measured between peaks of the vibration signal. There are ***not*** multiple intervals of time between peaks. As detailed in paragraph [0013] of the specification, a number n_1 of intervals of time that fall within a first range (between a first time and a second time) are counted and a number n_2 of intervals of time that fall within a second range (between the second time and a third time) are counted. As an example, the first, second, and third times are predetermined based on which of the three alternative embodiments are selected to determine the rain rate, as described in paragraphs [0020] through [0034] of the specification. However, other reasoning may be employed to predetermine the first, second, and third times.

Point process equations, in applications different from the method claimed herein, are known and are generally understandable to those with a basic knowledge of statistics. In fact, the *Oxford Dictionary of Statistical Terms* (Exhibit attached) defines a point process as "a stochastic process consisting of point events occurring irregularly in time and/or space." Furthermore, the subject application, in paragraph [0014] of the specification, describes in detail a unique use of a point process equation for determining the rain rate. For the above mentioned reasons, it is respectfully submitted that the § 112, first paragraph rejection of claims 1-30 is overcome.

Claims 1-30 also stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention. In claim 1, the manner by which the number of intervals of time is counted is not pertinent to the invention that is claimed herein. Instead, all that is claimed (and therefore all that is important) is that the number of time intervals are, in fact, actually counted. To this end, any person of ordinary skill in the art would appreciate that the microprocessor utilized to accomplish the method of the present invention, as outlined in paragraph [0012] of the specification, is capable of counting the number of intervals of time in a variety of different ways. For example, the microprocessor would simply increment a register to count the number n_1 of intervals of time and increment another register to count the number n_2 of intervals of time.

Claims 3-7 have been amended to clarify antecedent basis issues, such that § 112, second paragraph, rejection of these claims is believed to be overcome. Furthermore, as described in paragraph [0016] of the specification as originally submitted, "v", as used in claims 10-12, expresses the magnitude component of digital values that are representative of the vibration signal. More specifically, v(n-1) defines a first magnitude, v(n) defines a second magnitude, and v(n+1) defines a third magnitude. Claim 30 has been amended to clarify the use of intervals of time with a point process equation to determine the rate of rain. Therefore, it is respectfully submitted that the § 112, second paragraph rejection of claims 1-30 is overcome.

Claims 1, 2, and 27-30 also stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kato et al. (United States Patent No. 5,119,002) in view of Obradovich (United States Patent No. 6,275,231). The Examiner states that Kato teaches the calculation of an intermittent period T using the formula T=K/R in determining a rain rate from a vibration signal. It appears the Examiner infers that the equation T=K/R is an example a point process equation. The Examiner further states that Kato lacks a teaching of using "peaks" of the signal. Therefore, the Examiner cites Obradovich to show a teaching of using "peaks" by determining the frequency of vibration of a windshield, wherein the vibration has an intensity above a predetermined threshold. Applicant respectfully traverses the § 103 rejection because the Examiner has failed to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or

in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. As further established, once combined the references must either disclose each and every limitation of the claim or make obvious any such limitations not disclosed. See *In re Sang Su Lee*, 277 F.3d 1338 (Fed. Cir. 2002), citing *Brown & Williamson Tobacco Corp. v. Phillip Morris, Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000). Applicant submits that, when combined, the references do not disclose each and every limitation of the claim.

Contrary to the Examiner's assertions, ***T=K/R is not a point process equation***. Instead, Kato merely discloses calculation of an intermittent period T for operating windshield wipers of the vehicle. The intermittent period T is inversely proportional to an "output signal" R using the formula T=K/R. K is a constant and the output signal R is produced by a vibration sensor. Kato, therefore, does not disclose, teach, or suggest utilizing a point process equation. Rather, the output signal R simply increases as the vibrations on the vibration sensors increase in intensity, and vice-versa.

Obradovich discloses determining the frequency of a vibration on a windshield. Particularly, the frequency of the vibrations whose intensity exceeds a predetermined threshold is determined. However, Obradovich does not disclose, teach, or suggest the use of a point process equation with the determined frequency to determine the rain rate on the windshield. Without the use of the point process equation, vibrations whose intensity exceed the predetermined threshold caused by non-rain sources will be erroneously factored into any rain rate determination. Furthermore, with respect to claim 1, Kato and Obradovich also do not disclose, teach, or otherwise suggest the steps of counting a number of intervals of time.

Since neither Kato nor Obradovich discloses or even teaches the use of a point process equation, the Examiner has not met his burden of producing a *prima facie* case of obviousness in claims 1 and 30. Accordingly, it is respectfully submitted that the § 103 rejection of independent claims 1 and 30 is overcome and that these claims are allowable. The remaining claims, specifically claims 2-29 depend, either directly or indirectly, from claim 1 such that these claims are also allowable.

It is respectfully submitted that the Application, as amended, is now presented in condition for allowance, which allowance is respectfully solicited. The Commissioner is authorized to charge our Deposit Account No. 08-2789 for any fees or credit the account for any overpayment.

Respectfully submitted,

HOWARD & HOWARD ATTORNEYS, P.C.

Dated: March 31, 2004

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CERTIFICATE OF MAILING

I hereby certify that the attached Amendment is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to the **Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450**, on **March 31, 2004**.

Brenda J. Hughes

Brenda J. Hughes

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THE OXFORD DICTIONARY OF STATISTICAL TERMS

EDITOR

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point of indifference The central point of the operating characteristic curve: the percentage defective in the bulk that will be accepted or rejected equally often. Alternatively 'point of control', it occurs in attribute sampling schemes.

point process Stochastic process consisting of point events occurring irregularly in time and/or space (Cox and Isham, 1980).

point sampling A method of sampling a geographical area by selecting points in it, especially by choosing points at random on a map or aerial photograph.

Poisson, Siméon-Denis (1781–1840) French mathematician and mathematical physicist. His contribution to probability theory is not confined to the distribution which bears his name or to the expression '**Law of Large Numbers**' (Poisson, 1835), but bears on various areas, ranging from pure mathematics to the mathematics of artillery.

Poisson approximation Any approximation based on the Poisson distribution, the simplest use being for binomial probabilities.

Poisson beta distribution A compound distribution proposed by Holla and Bhattacharya (1965) where the parameter λ of a Poisson distribution is itself distributed as a beta of the first or second kind.

Poisson binomial distribution A discrete distribution of the number of successes in n independent trials with probability p_j of success in the jth trial. The binomial distribution is a special case where the parameters are $n, p_1, p_2, \ldots, p_n$ and $p_1 = p_2 = \ldots = p_n = p$. If p_j is specified as a function of a random variable p and a constant c_j, the resulting distribution obtained by integrating over the frequency of p is sometimes called a Poisson–Lexis distribution.

Poisson clustering process A term proposed by Bartlett (1963) to cover a complex Poisson process where each event in the basic Poisson process is followed by a sequence of associated events, themselves forming a subsidiary process not necessarily Poisson, before the succeeding event in the main process. Where the subsidiary processes are also Poisson we have a **doubly stochastic Poisson process**.

Poisson distribution The Poisson distribution is used as a model when counts are made of events or entities that are distributed at random in space or time. The Poisson distribution developed by Siméon-Denis Poisson has probability function $f(k)$ with mean λ and is

$$f(k) = (\lambda^k e^{-\lambda})/k!, \quad \text{where } k = 0, 1, 2, \ldots, \quad \text{and } \lambda > 0.$$

Here $f(k)$ is the probability of k occurrences of the event in one unit of space or time.

Poisson forest A descriptive term for a two-dimensional Poisson process.

Poisson index of dispersion An index appropriate to events obeying a Poisson distribution. If k samples of the same size have frequencies of occurrence